

WHAT IS CLAIMED IS:

1. A slot timing synchronization method in a code division multiple access mobile communication system, said slot timing synchronizing method comprising the steps of:

transmitting from a base station a control signal via perch channels, a first section of one slot of said control signal being spread by a long period code assigned to said base station, a second section of said one slot being spread by a predetermined short period signal; and

in a mobile terminal, despreding said control signal by using said predetermined short period code, and conducting slot timing synchronization by using a correlation value obtained as a result of despreding, a spreading factor of said predetermined short period code being set to a value lower than a spreading factor of the long period code and a short period code spreading said first section.

2. A slot timing synchronization method according to claim 1, wherein the base station makes transmission power of said second section larger than transmission power of said first section.

3. A slot timing synchronization method according to claim 1, wherein said second section is spread by a first short period code common to base stations included in the mobile communication system and a second short period code corresponding to classification of the long

period code spreading said first section.

4. A slot timing synchronization method according to claim 3, wherein a spreading factor of said first short period code is set to a value lower than that of said second short period code.

5. A slot timing synchronization method according to claim 3, wherein said second section is time-divided into a plurality of subsections, and said first short period code is spread in a first subsection, and said second short period code is spread in a second subsection.

6. A slot timing synchronization method according to claim 5, wherein the classification of the long period code spreading said first section is discriminated on the basis of said second short period code and a position of a subsection in which said second short period code has been spread.

7. A cell search method in a code division multiple access mobile communication system, said cell search method comprising the steps of:

transmitting a control signal from a base station via perch channels, a first section of one slot of said control signal being spread by a long period code assigned to said base station, a second section of said one slot being spread by a first short period code having a spreading factor lower than a spreading factor of said long period code and a second short period code having a spreading factor equal to or lower than the

spreading factor of said long period code; and

in a mobile terminal, despreding said control signal by using said first short period code, and conducting slot timing synchronization by using a correlation value obtained as a result of despreding.

8. A cell search method according to claim 7, wherein said first short period code is a short period code common to base stations included in the mobile communication system, and said second short period code has a plurality of short period codes so as to correspond to classification of the long period code spreading said first section,

the mobile terminal despreads said control signal at said synchronized slot timing by using the plurality of short period codes forming said second short period code, and discriminates the classification of the long period code spreading said first section on the basis of a correlation value obtained as a result of despreding, and

the mobile terminal despreads said control signal at said synchronized slot timing by using a long period code belonging to said discriminated classification, and discriminates the long period code spreading said first section on the basis of a correlation value obtained as a result of despreding.

9. A mobile terminal used in a code division multiple access mobile communication system, said mobile terminal comprising:

an RF unit for converting a received signal of a carrier frequency received from an antenna to a received signal of a baseband; and

a matched filter for receiving input of said received signal of the baseband, despreading said received signal, and outputting a correlation value,

wherein said received signal includes a control signal, a first section of one slot of said control signal is spread by a long period code assigned to said base station, and a second section of said one slot is spread by a first short period code having a spreading factor lower than a spreading factor of said long period code and a second short period code having a spreading factor equal to or lower than the spreading factor of said long period code, and

said matched filter despreads said control signal by using said first short period code.

10. A mobile terminal according to claim 9, wherein said first short period code is a short period code common to base stations included in the mobile communication system, and said second short period code has a plurality of short period codes so as to correspond to classification of the long period code spreading said first section.

11. A mobile terminal used in a code division multiple access mobile communication system, said mobile terminal comprising:

an RF unit for converting a received signal of

a carrier frequency received from an antenna to a received signal of a baseband; and

a matched filter for receiving input of said received signal of the baseband, despreading said received signal, and outputting a correlation value,

wherein said received signal includes a control signal, a first section of one slot of said control signal is spread by a long period code assigned to said base station, and a second section of said one slot is spread by a predetermined short period code, and

the number of taps of said matched filter is smaller than a spreading factor of said long period code of said control signal.

ADD
G1

add
C2

add
S1